

Sub
a1
E' 5

1. In a wireless data communications system wherein data communications are provided between mobile units and a central computer via access points, the improvement wherein at least some of said access points are connected to said computer through at least one data switching hub, and wherein said data switching hub is arranged to selectively provide data communications to access points connected to said hub in accordance with destination address data in said communications.

10

2. The improvement specified in claim 1 wherein said data switching hub is arranged to monitor source address data in communications received from each access point connected to a port of said data switching hub, wherein said switching hub is arranged to maintain a routing list correlating said source address data with said port of said data switching hub and wherein said switching hub is arranged to use said list to selectively provide said data communications to said access points.

15

3. An access point for use in a wireless data communications system wherein access points in radio data communications with mobile units are connected to at least one data switching hub for selectively providing data communications to said access points, comprising a transmitter/receiver for providing said radio data communication with said mobile units, a data interface for providing data communication with said switching hub over a cable, a processor for

20

coupling data between said data interface and said transmitter/receiver and a power supply for

receiving operating power from said cable and providing power to said interface, said processor and said transmitter/receiver.

4. An access point as specified in claim 3, wherein said access point is arranged
5 in an enclosure, said enclosure including an antenna, said transmitter/receiver, said data interface, said processor and said power supply.

5. An access point as specified in claim 4 wherein said enclosure includes an
adhesive surface for mounting said enclosure to a wall or ceiling.

6. An access point as specified in claim 4 wherein said enclosure includes a data
cable jack for said connection to said data switching hub, said data cable jack arranged to be
received in a data cable socket.

7. An access point as specified in claim 3 wherein said data interface includes a
first connector for connecting said access point to said switching hub over said cable and a
second connector, arranged in parallel with said first connector for connecting another device to
said switching hub over a further cable.

8. A method for providing data communications between mobile units and a

central computer comprising:

connecting said central computer to at least one switching hub over a wired data communications network;

connecting a plurality of access points to ports of said switching hub;

5 associating mobile units with selected ones of said access points;

providing data communications packets on said wired communications network, said packets including destination addresses;

maintaining a routing list at said switching hub relating said ports to said access points and to said mobile units associated with said access points;

10 operating said switching hub to relay data communications packets from said wired data communications network to said access points in accordance with said routing list; and

relaying data communications received from said switching hub by said access points to associated mobile units by radio communications.

15 9. A method as specified in claim 8 wherein said access points are arranged to not relay a selected type of data communications received from said switching hub.

10. A method as specified in claim 8 further including the steps of:

providing data communications packets from one of said mobile units by radio communications to an associated access point, said packets including a destination address and a source address corresponding to said mobile unit;

relaying data communications packets received by said access points from said mobile units to a port of said switching hub; and

operating said switching hub to relay said data communications packets received from said access points to said wired data communications network or said other access points in accordance with said destination address and to update said routing list at said switching hub by relating said port of said switching hub to said source address of said data packet.

11. A method as specified in claim 10, wherein said mobile units are arranged to associate with one of said access points for radio data communications therewith, and wherein said mobile units are further arranged to send a data communications message upon association with an access point, said message causing said switching hub to update said routing list with the address of said mobile unit.

12. A method as specified in claim 10 wherein said mobile units are arranged to associate with one of said access points for radio data communications therewith, and wherein

said access points are arranged to send a data communications to said switching hub, when a mobile unit becomes newly associated with said access point, said message having a source address corresponding to said newly associated mobile unit and causing said switching hub to update said routing list with the address of said mobile unit.

5

13. A data communications system for providing data communications between at least one computer and a plurality of mobile units, comprising:

a plurality of access points, each arranged for providing radio data communications and having a wired data interface;

a plurality of mobile units, each arranged to associate itself with one of said access points and conduct radio data communications therewith;

at least one switching hub having a first wired data port and a plurality of additional wired data ports, each connected to said wired data interface of one of said access points; and

a wired data communications network for providing wired data communications between said at least one computer and said first wired port of said switching hub.

14. A data communications system as specified in claim 13 wherein data is communicated over said wired data communications network as data packets, each of said packets having destination address data and wherein said switching hub is arranged to examine

said destination address data and provide said data packets to one of said additional wired ports if said destination address data corresponds on a routing list to an address associated with said one additional wired port.

5
15. A data communications system as specified in claim 14 wherein data is communicated as data packets from said access points via said wired data interface to one of said additional wired data ports of said switching hub, said data packets including source address data, and wherein said switching hub is arranged to examine said source address data and to associate the corresponding source address data with said one additional port on said routing list.

10
16. A data communications systems as specified in claim 13 wherein said wired data interface of said access points are connected to said additional wired data ports of said switching hubs over multiconductor cables, and wherein said multiconductor cables are arranged to provide power to said access points.

15
17. A data communications system as specified in claim 16 wherein there is provided a power supply module associated with said switching hub for providing power to said multiconductor cables.

20
18. In a wireless data communications system wherein there are provided access

points for interconnecting mobile units in radio communications with said access points and a wired data communications network, the improvement wherein at least some of said access points are supplied with power using data communications cables of said wired data communications network.

add \$1